

# SQUAD SHARPSHOOTER CONCEPT

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# Development of the Sharpshooter Concept

- Historical Retrospective vs. Emerging Tech/Operational Environments/Threats
- Interrelationship Between Technical Innovation (materiel), Tactical Innovation (doctrine, training, & organization) and Battlefield Capability
- Attempt to Significantly Effect Dynamics of Infantry Close Combat, near term, without new R&D program, or significant increase equipment or training costs (\$ & ammo)

# **Sharpshooter Organizational Concept**

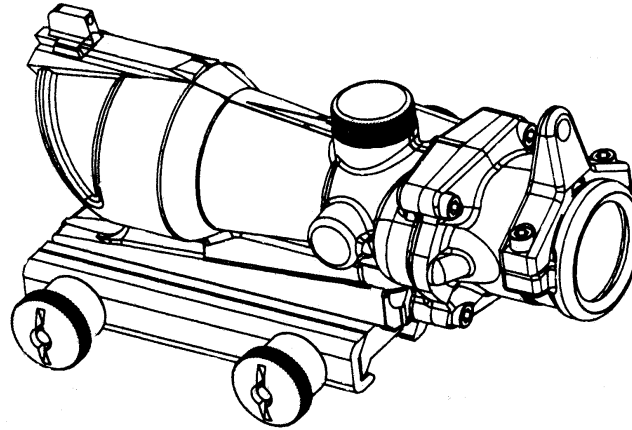
- Simplest level, give the best shot in each squad a Day Optical Scope (DOS).
  - Standard M16A2/A3 Rifle, M4/M4A1 Carbine M855 ammunition.
  - Two additional days range training.
  - Capability to hit F target 300m E target 500m.
  - Greatest increase in capability at least cost.
  - Disadvantage the sharpshooter can locate targets and has better situational awareness than the leader (problem of shoot/don't shoot).

# Sharpshooter Organizational Concept

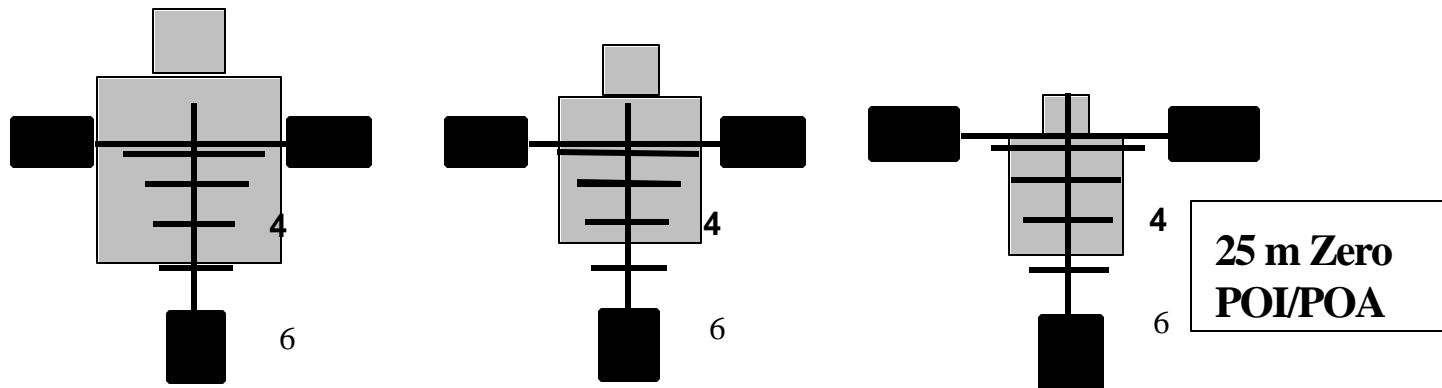
- Squad Leaders and Fire Team Leaders
  - Exploits their marksmanship training and experience
  - Enhanced target acquisition adds to their situational awareness to control fires and maneuver the squad
  - Leaders make the shoot/don't shoot decision
- This adds 27 to 81 Sharpshooters to the 3 Snipers currently in a Infantry Battalion. That changes dynamics of close combat.

# Day Optical Scope

NSN 1240-01-412-6608



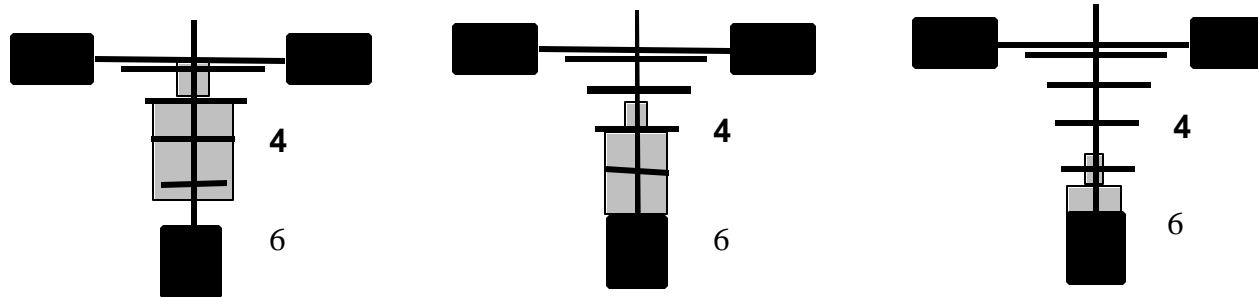
- Acquiring the target, ranging, compensating for bullet drop is done in one step and without taking attention of the target= speed
- Wide field of view and non-critical eye relief = speed



100m

200m

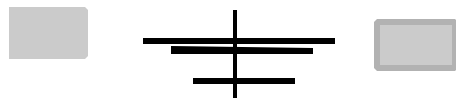
300m



400m

500m

600m



The range mark is equal to the width of a man at that range and compensates for the bullet drop.

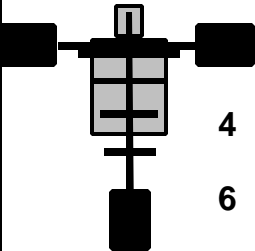
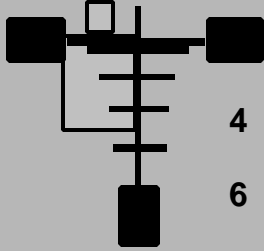
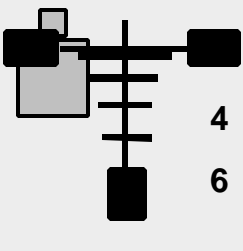
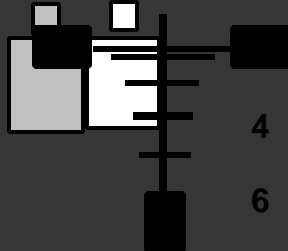


At night the 100 to 300 marks are illuminated.

# Sharpshooter Windage Technique

- Winds from vicinity 6 or 12 o'clock No Hold Off
- Ranges less than 100m winds less than 20mph No Hold Off
- Winds from vicinity 10, 2, 4, or 8 o'clock use one half speed
- Estimate range, estimate wind, apply hold off and fire apply next hold off and immediately fire again

Wind/ mph	100m	200m	300m	400m	500m	600m
3	0.4in	1.8in	4.4in	8.5in	14. in	22in
5	0.7in	3.1in	7.3in	14 in	24 in	37in
8	1.2	4.9in	12 in	23in	38 in	59in
10	1.4	6.1in	15 in	28in	48in	74in
12	1.7in	7.4in	18in	34in	57in	89in
15	2.2in	9.2in	22in	42in	72in	110in
20	3 in	12 in	30in	57in	96in	148in

No Hold Off	1 Hold Off	2 Hold Off	3 Hold Off
	9-17 in	12-26in	21-37in
			

# **DOS Enables You to See Better Not Shoot Better**

- 4x32 optics enables you to see 4 times better than the enemy.
- Exit pupil ( $32 \div 4 = 8$ ) enhances dusk/dawn vision.
- Tritium lit reticle allows aiming at muzzle flashes and under low illumination.
- Enhance vision allows positive identification of target (fratricide / rules of engagement).



## **DAY OPTICAL SCOPE (DOS)**

- Compatible with nightvision pocketscope and adapters for passive engagement.
- Rail mount returns to zero. Switch with PVS-17 Mini-Nightvision Sight for Day/Night.
- CQB ironsights on top faster than standard ironsights at close range <35m.

# Expected Type and Range of Engagements

- **Range**
  - **<100m** **30-40%**
  - **<200m** **65-75%**
  - **<300m** **75-85%**
  - **<400m** **85-95%**
- **Target Type**
  - **Point** **25-30%**
  - **Groups/Sources of Fire/Danger** **55-60%**
  - **Other(buildings, vehicles, etc.)** **20-25%**
- **Light Conditions**
  - **Day** **50%**
  - **Night** **30%**
  - **Dusk/Dawn** **20%**
- **Firing Positions/Modes**
  - **Aimed semi-auto** **20-25%**
  - **Supported position** **20-25%**

# **Expected Type and Range of Engagements**

- Consistent in British/US/German/Israeli Studies and WWII, Korea, Arab/Israeli
- No Collection or Analysis Recent Conflicts but anecdotal information consistent
- Despite Weapons/Ammo/Doctrine/Training
  - 30-06, 303, 7.7 Type 92, 7.92x57, 7.62x54R
  - Sights graduate 1500-2000 yd.
  - Range Training at 1000 yds

# Factors Limiting Engagement Range

- Both side were limited by unaided human vision and ironsights.
  - Human target difficult to see at 100-150m.
  - Target is smart- pop-up targets don't live long.
  - Aiming errors of sight alignment and restricted view/light through ironsights.
  - CCO eliminates sight alignment errors, less restricted view but lens coatings reduce light level. Faster, better when target or shooter moving, no better at target detection.

# Factors Limiting Engagement Range

- Trajectory for 300m zero puts bullet 6-7 inches high at critical 100-150m
  - Center hold on head, bunker aperture, loophole missies
- Range estimation and bullet drop compensation required to hit 300-600
- Hits beyond 500m requires precision in range estimation, wind reading, steady hold, breath control, trigger control, match ammo =  
**Trained Sniper.**

## **Tactical Advantage of Increased Range, Accuracy & Speed of Engagement**

- Stand-off = Engaging from beyond the range the enemy can effectively acquire, engage, or maneuver. The longer you hold him beyond his effective range the fewer casualties you take.
- Machine guns 500-600m grazing fire, cone of fire optimum for suppression, RPG-7& SVD again 500m.
- Attack positions are 400m out, beyond effective rifle fire, close enough troops will not be exhausted conducting individual movement.
- A speed of engagement of 2-3 sec means enemy has to make 1.5 sec rushes instead of 3-5 sec rushes.

# **Tactical Advantage of Increased Range, Accuracy & Speed of Engagement**

- Suppression = Fires that degrade the enemies ability to fire or maneuver effectively
- Most Shooting in Fire Fight is for Suppression
- Quantify Suppression Factors
  - Morale/Discipline & Percent/Rate of Casualties
  - Perceived Probability of Kill/Audio/Visual Signature of Rounds
- Physical Suppression Incapacitated Killed/Wounded
- Sharpshooters provide effective point suppression and make overall suppression more effective.

# Sharpshooter Capability

Head shots at 100m

F type 300m

E type 500m



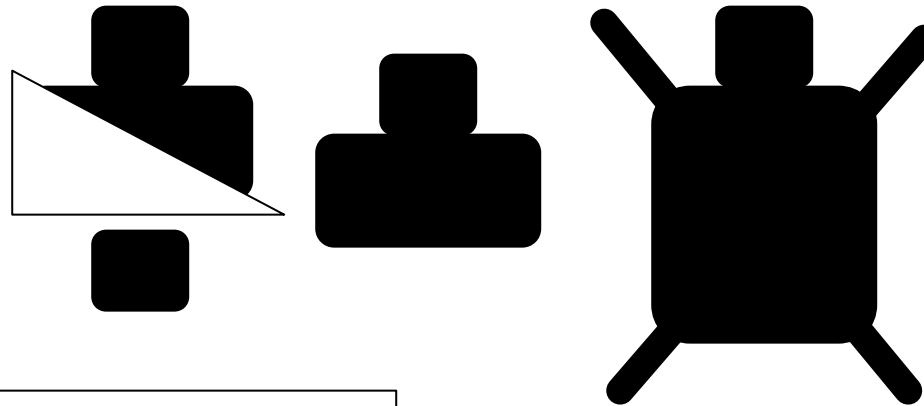
Anti-Marksman

Anti-LMG



Anti- MG

Anti-RPG



More F Targets

Fewer E Type



Precision Suppression

Hit smaller harder to see close targets



## **Tactical Employment**

- Support in overwatch delivering precision suppressive fire on selected targets(bunker apertures, loopholes, MG positions,etc.) will increase effect of suppressive fires.
- Accompany assaults to eliminate selected targets in centers of resistance.
- Engage targets of opportunity, leaders, snipers, radio operators, weapons crews (RPG, MG, GMG) to delay, disrupt, confuse and inflict casualties.
- Precision suppression of known, likely, suspected enemy positions as opposed to just shooting in the direction of the enemy.

# **Tactical Employment**

- Precision Suppression is about how fast you hit not how fast you can shoot.
- On outposts or perimeter to provide counter-recon, early warning, hit enemy in attack position, engage supporting weapons, and protect obstacles.
- Locate, identify, and engage camouflaged concealed, or partially exposed targets and reduce fratricide.
- Engage threats in proximity to civilians or under strict Rules of Engagement (OOTW).

# Sharpshooter as Countersniper

## Three Levels of Sniper Threat

- **Professional Sniper:** specially selected, specially trained, equipped with modern optically sighted sniper rifle and match ammo; selected targets.
- **Marksman:** trained soldier/guerrilla, above average shooting and fieldcraft skills, standard rifle & ammo ironsights/optic; engages mission related targets of opportunity in coordination with his unit's actions.
- **Irregular Sniper:** limited training, but may have been fighting for years; scoped hunting or military rifles; intimate knowledge of terrain; hides among civilians; engages targets of opportunity; loosely coordinated actions.

# Sharpshooter as Countersniper

- Against Professional Sniper the sharpshooter is **overmatched**. Countersniper operations requires a better trained sniper with a better rifle and optics. Except when sharpshooter:
  - Part of patrol that jumps a sniper in his hide at close range  $< 100\text{m}$ .
  - Part of ambush that catches a sniper moving into or fleeing a hide position.
  - Chance contacts at close range.
  - Sniper's high powered optics and lack of firepower put him at disadvantage at close range and when he does not have initiative.

## Sharpshooter as Countersniper

- The **Marksman** is similar to sharpshooter and a more even match; leveraged by training, shooting and fieldcraft skills, accuracy of rifle and ammo, capability of the optics, and which is the hunter.
- Sharpshooter's capability overmatches **Irregular Sniper** and if properly employed can to a great extent neutralize this threat.
- **The best counter-sniper is still a better trained and better equipped sniper.** Sharpshooters would provide a base to draw candidates for sniper training improving the sniper program.